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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PANI, JOHN

ART UNIT	PAPER NUMBER
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3736

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,944	Applicant(s) KHATIB ET AL.	
	Examiner JOHN PANI	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2009 and 07 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The amended specification was received on 12/7/2009. The amendments are accepted.

Claim Objections

2. Claims 1-10 and 37-39 are objected to because of the following informalities: In reference to Claim 1, it is not clear whether the "elongate intervention device" is a positively recited portion of the claimed "apparatus" or a part of a statement of intended use. If the "elongate intervention device" is intended to be part of the "apparatus" it is suggested to clarify that the "apparatus" comprises "an elongate intervention device". In line 8 it is suggested to replace "arranged" with --configured-- in order to clarify the claim terminology. In claims 2-10 and 37-39, it is suggested to replace "according to" with --of-- in order to conform with standard US practices. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-10 and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 6-8 recite “the controller being connected to the at least one force sensor arranged to calculate the applied force”. It is unclear whether this limitation requires that the controller or force sensor is arranged to calculate the applied force. The broadest reasonable interpretation is that the limitation would be met by either a force sensor or controller arranged to calculate the applied force, and this interpretation has been applied herein.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-7, 10, 37, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 6,096,004 to Meglan et al. (“Meglan”).

7. Meglan teaches:

In reference to Claim 1

A haptic feedback apparatus (Fig. 2) comprising: a force applicator (52) arranged to apply a force to an elongate intervention device (at least 10', 12', 14', 50, 56, 10", 12", and 14"), the intervention device carrying at least one force sensor (at

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least one of 114, 116 of 50; note that a broad definition of "carry" is "to wear, hold or have around one"; see "carry". Dictionary.com; definition based on Random House Dictionary. accessed 2/18/10) arranged to sense a remote force acting on the intervention device; a controller (56, 66) arranged to control the force applied to the intervention device by the force applicator, the controller being connected to the at least one force sensor arranged to calculate the applied force based on the remote force, the applied force being an amplification of the remote force (see at least col. 5 lines 15-35), wherein the force applicator comprises a resilient member (at least 120, 122, 124, 126, 140) arranged to apply the said force to the intervention device, and wherein the apparatus further comprises a sensor (at least other of 114, 116 of 50) arranged to detect frictional force between the resilient member and the intervention device.

In reference to Claim 2

The haptic feedback apparatus of claim 1 (see above) wherein the detected frictional force is used to control the amount of applied force (col. 5 lines 15-35, col. 7 lines 10-20).

In reference to Claim 3

The haptic feedback apparatus of claim 1 (see above) further comprising a tracking device for tracking rotational movement of the intervention (see col. 6 lines 53-55).

In reference to Claim 4

The haptic feedback apparatus of claim 1 (see above) further comprising a tracking device for tracking the linear movement of the intervention device (see col. 6 lines 53-55).

In reference to Claim 5

The haptic feedback apparatus of claim 1 (see above) further comprising a comparator (56) for comparing the remote force with a reference force (Meglan teaches setting the desired force applied at the slave to some multiple of the force sensed at the master).

In reference to Claim 6

The haptic feedback apparatus according to claim 1 (see above) wherein the intervention device and the at least one force sensor are suitable for insertion into a simulated human model (depending on size, shape, etc. of the human model).

In reference to Claim 7

The haptic feedback apparatus of claim 6 (see above) wherein the remote force is generated using computer simulation. (The Meglan device would be capable of receiving a remote force from a computer simulation).

In reference to Claim 10

The haptic feedback apparatus according to claim 7 (see above) further comprising a plurality of force sensors disposed along a length of the intervention device and the controller is connected to each of the plurality of force sensors (see Fig. 3).

In reference to Claim 37

The haptic feedback apparatus according to claim 9 (see above) wherein the at least one force sensor is embedded in the intervention device (see Fig. 3; note that 50 is interpreted as part of the "intervention device").

In reference to Claim 39

The haptic feedback apparatus of claim 10 (see above) wherein the plurality of force sensors are embedded in the intervention device (see Fig. 3, note that 50 is interpreted to be part of the "intervention device").

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meglan.

In reference to Claim 8

Meglan teaches the haptic feedback apparatus of claim 7 (see above) but does not explicitly teach that the intervention device is operable to be inserted into a human subject (see Fig. 2), but is silent regarding the size and mobility of master unit 50 (these being the factors which would determine whether the force sensor was operable to be inserted into a human subject). It would have been obvious to one having ordinary skill in the art at the time of the invention to have made the master unit 50

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portable and of a size which would fit within a human subject (particularly because human subjects vary in dimensions), as this would allow the unit to be easily transported from operating room to operating room.

In reference to Claim 9

Meglan teaches the haptic feedback apparatus of claim 8 (see above) and teaches the at least one force sensor is disposed near or at a tip of the intervention device (see Fig. 3).

10. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meglan in view of US Pat. No. 5,957,833 to Shan ("Shan").

Meglan teaches the apparatus of claim 10 (see above), but does not explicitly disclose that the plurality of force sensors are arranged to detect a shape of the intervention device. Shan teaches an endoscope (38) which includes a plurality of strain gauges (30) which are arranged to detect a shape of the intervention device so that the user can monitor its position within the body (see entire disclosure). It would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Meglan by including a plurality of strain gauges along the catheters so that the user could monitor the shape of the device within the body as taught by Shan.

Response to Arguments

11. Applicant's arguments, see pgs. 4-5 "Priority/Oath & Declaration/Specification", filed 7/17/2009, with respect to the declaration and foreign priority have been fully considered and are persuasive. The objections of 3/20/2009 have been withdrawn.

12. Applicant's arguments, see pg. 5 "Claim Objections", filed 7/17/2009, with respect to the objected claims have been fully considered and are persuasive. The objection of 3/20/2009 has been withdrawn.

13. Applicant's arguments, see pg. 5 "Claim Rejections – 35 U.S.C. § 112", filed 7/17/2009, with respect to claims 1-10 have been fully considered and are persuasive. The rejection of 3/20/2009 has been withdrawn.

14. Applicant's arguments with respect to claim 38 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's remaining arguments filed 7/19/2009 have been fully considered but they are not persuasive. In response to Applicant's argument that Meglan does not teach that "the intervention device carries at least one force sensor", the Examiner respectfully disagrees and notes that one common definition of "carry" is "to wear, hold, or have around one" [emphasis added] ("carry." Dictionary.com Unabridged. Random House, Inc. 19 Feb. 2010. <Dictionary.com <http://dictionary.reference.com/browse/carry>>), and that Fig. 3 clearly shows that the sensors are around portions 10', 12', 14' of the intervention device. Additionally, as noted in the statement of rejection 50 is interpreted as part of the claimed "intervention

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device", and Fig. 3 clearly shows that case 72 of 50 "carries" units 70, which include the sensors.

16. In response to Applicant's assertion that Meglan does not teach "a resilient member arranged to apply the said force to the intervention device", the Examiner respectfully disagrees. As Applicant notes, pairs of springs are located on posts 126 between 124 and 126, and between the unshown retaining nuts and 124 (see Fig. 9). Clearly at least these portions are "resilient", as they include springs, and are "arranged to apply the said force to the intervention device", as the retaining nut is tightened to clamp down on the catheters (see col. 7 lines 55-65). Because the structure detailed above as "the resilient member" includes springs, the Examiner maintains that it is fairly interpreted as a "resilient member".

17. In response to Applicant's assertion that Meglan does not disclose "a sensor arranged to detect frictional force between the resilient member and the intervention device", the Examiner respectfully disagrees. Particularly, the Examiner notes that the encoders in assemblies 114 and 116 monitor rotation of wheels 102 and 104, and that because a friction force is required for the catheters to cause rotation of the wheels, the detection of the rotation of the wheels is a detection of frictional force between the resilient member (at least the wheels of said resilient member) and the intervention device (i.e. the catheter), because frictional force is what causes the rotation.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN PANI whose telephone number is (571)270-1996. The examiner can normally be reached on Monday-Friday 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JP/ 2/19/10

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736